

## **REMARKS**

Entry of the foregoing and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 1-22 were pending. By the present response, claims 1 and 22 have been amended, claim 15 canceled, and claim 23 has been added. Thus, upon entry of the present response, claims 1-14 and 16-23 remain pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: the original claims, and Fig. 2.

Entry of the foregoing is appropriate pursuant to 37 C.F.R. §1.116 for at least the following reasons. First, the amendments address the new grounds of rejection under 35 U.S.C. §112, second paragraph, thereby reducing the number of issues present upon appeal. Second, the amendments raise no new issues that would necessitate further search and/or substantive reexamination. Third, the amendments clearly overcome the grounds of rejection.

### ***CLAIM REJECTIONS UNDER 35 U.S.C. §112***

Claim 22 stands rejected under 35 U.S.C. §112, second paragraph, on the grounds set forth in paragraph 3 of the Official Action. By the present response, applicants have amended claim 22 in a manner which addresses the above-noted rejection and as suggested by the Examiner at paragraph 3. Reconsideration and withdrawal of the rejection is respectfully requested.

**CLAIM REJECTIONS UNDER 35 U.S.C. §103**

Claims 1-9, 11, 12 and 15-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO 98/09812 to Berlin et al. (hereafter "*Berlin et al. '812*") in view of WO 97/22536 to Berlin et al. (hereafter "*Berlin et al. '536*"), U.S. Patent No. 4,051,277 to Wilkinson et al. (hereafter "*Wilkinson et al.*"), U.S. Patent No. 5,683,534 to Lofgren et al. (hereafter "*Lofgren et al.*"), and U.S. Patent No. 5,506,011 to Farrell et al. (hereafter "*Farrell et al.*") on the grounds set forth in paragraph 5 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Claim 1, the only independent claim at issue here, recites that a method of producing a laminated packaging material for a liquid food packaging comprises, amongst other things, applying a barrier layer on at least a first side of carrier layer and drying during heating for driving off liquid at a first drying temperature at a first step, combining and permanently uniting a second side of the carrier layer with one side of a core layer in a second step, and cured by heating to above a second temperature, higher than the first temperature in a third step and applying outer layers of thermoplastics on the barrier layer and the core layer by means of extrusion in a fourth step. Thus, claim 1 produces a first structure by drying a barrier layer on a carrier layer and uniting the dried barrier and carrier layer with a core followed by curing this first structure above a second temperature. This second structure is then further processed to include outer layers of thermoplastics to complete the structure.

This process is graphically illustrated below in Figure A.

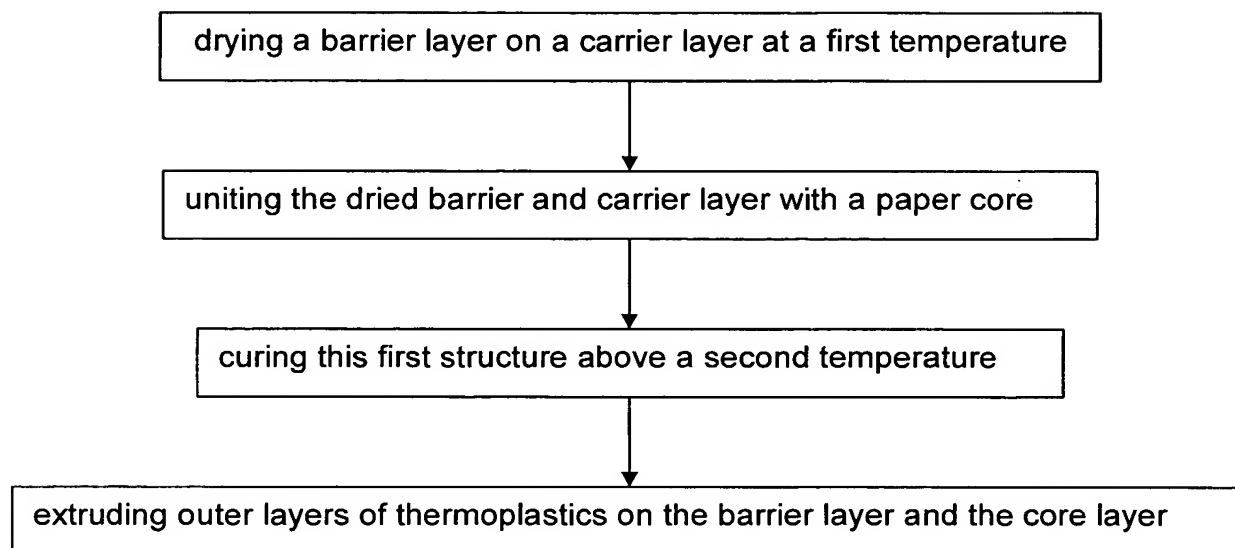


Figure A

**1. Each Of The Cited References is Lacking Claimed Features And The Proposed Combination Does Not Have All Of The Claimed Features**

None of the processes disclosed in any of the cited references, either alone or in combination, disclose such a process wherein a first structure is formed including a drying step followed by forming of the structure in a uniting step subsequent to drying, then curing the united structure, and then a fourth step extrudes outer layers to form the final structure.

For example, *Berlin '812* merely discloses drying a barrier layer that has been deposited on a web. See, for example, page 9, lines 25-29. A web is coated with adhesive and dried. This dried structure is then completed by a subsequent coating and drying process of a gas barrier layer and by a further subsequent coating process of an adhesive layer followed by lamination with a liquid barrier layer. See

column 9, line 16 to column 10, line 7 and Figure 3A. Thus, *Berlin et al.* '812 has a process that can be illustrated as follows:

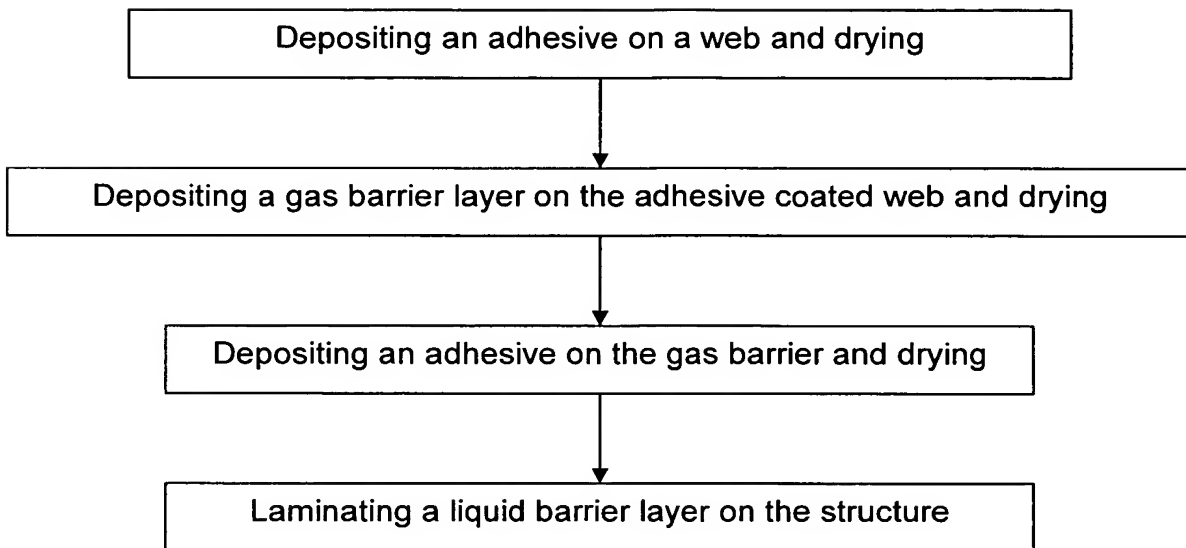


Figure B

As can be seen, each deposition step in forming the laminated structure has its own associated drying step. In other words, *Berlin et al.* '812 applies and dries each coating at each application step. At no point is an intermediate structure formed and cured. Rather, each of the deposited layers is treated and dried before the next application occurs.

In another example, *Berlin et al.* '536 discloses a process in which a gas barrier layer 14 is applied directly to a core of paper or paperboard 11 and then subsequently dried followed by "post-dry" or "post-cure" processing. See page 10, lines 23-24 and page 12, lines 4-12. This structure of *Berlin et al.* '536 is then subsequently processed in, for example, a nip roll to include extruded layers 18 and

19 (see Figure 2) forming the final structure illustrated in Figure 1. Thus, the process in *Berlin et al. '536* can be illustrated as shown below in Figure C.

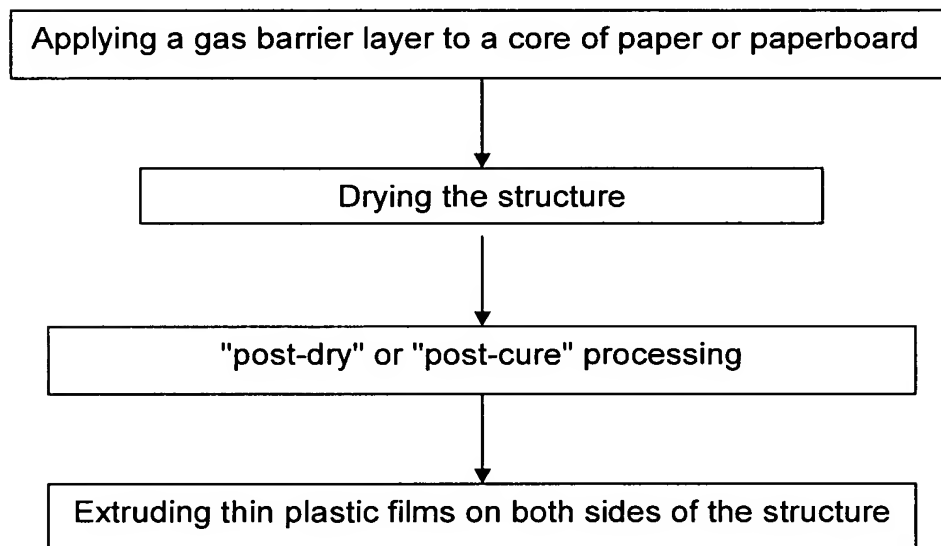


Figure C

Thus, as opposed to the present claims, *Berlin et al. '536* does not apply the gas barrier layer to a separate carrier layer and dries it before uniting to a core and curing. Rather, *Berlin et al. '536* is completely devoid of a carrier layer for the gas barrier layer and applies the gas barrier layer directly to the paper core.

Finally, *Wilkinson et al.* discloses forming a structure wherein each individual layer is heated on heat rolls (8, 9, 10) prior to engaging with other layers to form a corrugated paper-board structure. After the multiple layers have been formed into the final structure, referred to as "blanks" in *Wilkinson et al.*, the entire structure is cured at a temperature of 375°F (col. 10, lines 22-24). This final curing may be done

after accumulation and storage under ambient conditions (col. 9, lines 52-53). Thus, the process in *Wilkinson et al.* dries each individual layer of the structure prior to its application into a multilayer and only once the entire structure is assembled performs a curing step. There is no curing of an intermediate structure such as in the present claim 1 and there is no post curing layering in *Wilkinson et al.* as in the present claim 1. A process flow diagram for the process in *Wilkinson et al.* is shown in Figure D below.

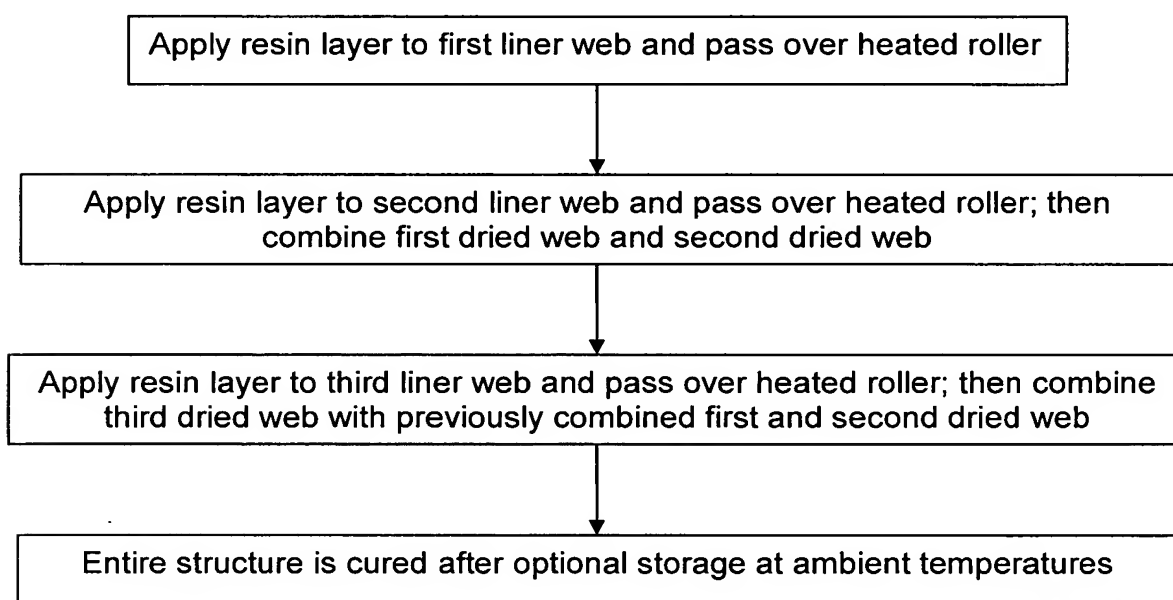


Figure D

Reviewing all of Figures B-D, applicants respectfully note that the references alone or in combination do not show a process as represented in Figure A and which correlates to the process claimed in claim 1 of the present application. Accordingly, the references referred to by the Examiner to show the process of claim 1 simply do

not present such a claimed process, either explicitly or by implication. For at least this reason, applicants respectfully assert that a *prima facie* case of obviousness has not been established.

## **2. The Proposed Combination And Modifications Of Cited References is Based On Hindsight**

There is no disclosure, teaching, or suggestion in any of the references, either alone or in combination, of the present method as claimed. Further, there is no suggestion within these references for the proposed modification to arrive at such claims. Rather, it is only by the Examiner's hindsight reconstruction including modifications not disclosed in any of the references, e.g., such as reordering process steps, eliminating carrier layers, and the like, that results in applicants' claimed process. Such hindsight re-construction and modifications without supporting suggestions is improper. Accordingly, withdrawal of the obviousness rejection as to these claims is respectfully requested.

Applicants note that additional references make up the proposed combination of the Examiner, however, *Lofgren et al.* does not disclose any process steps which contribute to the above teachings to arrive at the present claims. Rather, *Lofgren et al.* is cited merely for the proposition of rearranging a particular layering of layers within the final structure. Also, the citation to *Ferrell et al.* also does not contribute to a rejection of the above processes claims because it also is only cited for its alleged support of rearranging the layers in the claimed structure. Accordingly, neither of these disclosures contributes to overcoming the above-noted deficiencies in the combination of *Berlin et al.* '812, *Berlin et al.* '536, and *Wilkinson et al.*

For at least the above-noted reasons, withdrawal of the rejection is respectfully requested.

**3. Proposed Modifications in Cited References Are Unsuitable For the Intended Purpose and Therefore Not Proper**

Further, and as to the citation to *Lofgren et al.* and the alleged obviousness of changing the order of the core, carrier layer and barrier layer, applicants respectfully traverse the proposed combination raised by the Examiner on page 4. Specifically, the proposed combination points to *Lofgren et al.*, in which a carrier layer having a barrier layer on one side is affixed to a core in a nip roller as shown in Figure 6.

The rearrangement of the layers as suggested by the Examiner in citing to the combination including *Lofgren et al.* is problematic because the particular ordering of layers in the prior cited references is critical to the processing of each of those references. For example, reordering the application of layers necessarily results in a reordering of process steps including the drying and curing steps upon which the Examiner is relying for at least a portion of this rejection. Accordingly, the suggestion by the Examiner that it would have been obvious to reorder the layers as suggested by *Lofgren et al.* and *Ferrell et al.* is a too simple substitution without further inquiry into the affects such a substitution would have on the complex processing methods of the cited references.

For example, the Examiner's suggestion in combination with *Berlin et al.* '812 would result in the carrier layer 11 being inwards of the structure and gas barrier 22 being outwards of the structure (for example, with reference to Figure 2). However, as also disclosed in *Berlin et al.* '812, a gas barrier property in layers exposed to moisture or liquid deteriorate drastically and therefore these layers must be



surrounded by liquid-tight layers to preserve their properties. See page 3, columns 4-5. Thus, one considering the suggested rearrangement based on *Lofgren et al.* would not have been motivated to make such a change to the structures in *Berlin et al.* '812, because such a change would have resulted in the gas barrier layer being exposed to moisture or liquid thereby drastically deteriorating the desirable properties of the gas barrier layer. Accordingly, one of ordinary skill in the art considering such a proposed modification would not have been motivated to make such modification because it would have resulted in inferior properties of the desired product.

In another example, in combination with *Wilkinson et al.*, it is not clear that such proposed combination would have been considered by one of ordinary skill in the art. For example, *Wilkinson et al.* discloses that the surface-treating of faces of the corrugated container-board components results in treated surfaces, such as exposed faces of the containers, in such condition that they will readily absorb moisture. In other words, the surface-treating operation results in a layer interior to the corrugated components. It is not clear how the arrangement of layers in *Lofgren et al.* would be combined with the teachings in *Wilkinson et al.* to arrive at the present process and structure of claim 1.

Finally, *Berlin et al.* '536 applies a gas barrier layer directly to the core material and therefore there is no intervening carrier layer to rearrange as an obvious alternative as alleged by the Examiner on page 4.

From the above, it is respectfully asserted that one of ordinary skill in the art considering the proposed modifications based on *Lofgren et al.* and *Berlin et al.* '812, *Berlin et al.* '536, and *Wilkinson et al.* would not have found a suggestion or been

motivated to make the proposed combination because such a change in layers of any of the other references would necessarily result in inferior laminated packaging material for liquid food packaging. Thus, a *prima facie* case of obviousness has not been established by the proposed combination. For at least this further reason, the rejection is improper and should be withdrawn.

The remaining claims rejected here each depend from independent claim 1 and therefore are improperly rejected and/or distinguish over the cited references for at least the same reasons as discussed above. Accordingly, withdrawal of the rejection as to these claims is also respectfully requested.

Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Berlin et al. '812*, *Berlin et al. '536*, *Wilkinson et al.*, *Lofgren et al.*, and *Farrell et al.* as applied to claim 8 above, and further in view of EP 0 590 263 A2 to Kotani et al. (hereafter "*Kotani et al.*") on the grounds set forth in paragraph 6 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Claim 10 recites that the barrier layer is a mixture including an inorganic laminar compound. The barrier layer referred to in claim 10 is the liquid barrier layer (as can be seen by a review of the intervening dependent claims 7 and 8).

*Kotani et al.* merely discloses an inorganic laminar compound in a gas barrier layer (see, for example, Abstract).

The proposed combination does not result in all of the features in claim 10 being disclosed, taught or suggested in the proposed combination. Here, the primary references are completely silent as to the inclusion of a mixture including an inorganic laminar compound in the claimed barrier layer. The disclosure in *Kotani et*

*al.* does not address a liquid barrier layer, but rather a gas barrier layer. One of ordinary skill in the art would not have considered the disclosure in *Kotani et al.* to a gas barrier layer in considering modifications to a liquid barrier layer as the two layers are distinct in the art and have different compositions and different functions. Thus, the proposed combination has not established obviousness because the references have not been shown to teach or suggest all of the claimed features. See, MPEP §2142-43.

For at least the above noted reason, withdrawal of the rejection is respectfully requested.

Claims 13 and 14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,499,820 to Desaulniers (hereafter "*Desaulniers*") in view of *Berlin et al.* '812, *Berlin et al.* '536, *Wilkinson et al.*, *Lofgren et al.*, and *Farrell et al.* on the grounds set forth in paragraph 7 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Claims 13 and 14 depend from claim 1 and are therefore distinguishable over and/or improperly rejected over the primary references as discussed above. The disclosure in *Desaulniers* does not contribute to overcoming the above noted deficiencies in the primary combination. Therefore, for at least this reason, the rejection should be withdrawn.

Further, inclusion of the in *Desaulniers* reference actually further detracts from the rejection. The introduction of yet another reference which requires reordering of laminate layers and substitution of materials selected from the myriad of disclosed layers, orders of layers and materials is yet another indication of the hindsight nature

of the rejection. For at least this further reason, the rejection is improper and should be withdrawn.

Claim 21 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Berlin et al. '812*, *Berlin et al. '536*, *Wilkinson et al.*, *Lofgren et al.*, *Farrell et al.*, and U.S. Patent No. 6,331,346 to Lu et al. (hereafter "*Lu et al.*") on the grounds set forth in paragraph 8 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

*Lu et al.* is relied upon in the proposed combination merely for a disclosure of separate production lines (see page 11 of the Official Action). Such a disclosure in *Lu et al.* does not contribute to overcoming the above noted deficiencies in the primary combination. Therefore, for at least this reason, the rejection should be withdrawn.

**CONCLUSION**

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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